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OF INTEREST TO TEACHERS

NOTE-BOOKS IN HIGH SCHOOL BOTANY

BY WILLARD N. CLUTE

I think I have partially solved the problem of botanical note-books by a scheme of allowing certain pupils to answer the questions in the laboratory work by drawings, instead of written work. In buds, for instance, the question may be asked, "Do underground plants produce buds?" One pupil would hunt up some underground plants and answer "yes"; the others would make a drawing of such buds. For bud protection one would describe how buds are protected; another would make drawings to show this. All notes that cannot be answered by drawings must be in the temporary note-book, but those who draw their answers are excused from the written work of the permanent note-book. One course takes about as long as the other, but most pupils prefer the drawing; it is certainly easier for the teacher and I am inclined to think is fully as useful in teaching form and structure.

A lecture on water purification plants, one of a series in sanitary science at Columbia University, is announced for April 26.

An injunction issued by Secretary Ballinger after a personal inspection of the region has at least delayed the appropriation of the Hetch-Hetchy valley by San Francisco as a municipal water reservoir.

Cacti and desert plants for schools, gardens, and conservatories may be obtained from Mr. J. C. Blumer, Box 684, Tucson, Arizona.

A well-indexed and fully-illustrated government bulletin (No. 166) has just been written by William L. Bray on The Mistletoe Pest in the Southwest. The hosts, life history, and methods of combating the mistletoe are the main topics included in this clearly-written pamphlet of about forty pages.

A paper read by Dr. Roland M. Harper before the American Geographers at the Boston meeting of the American Association for the Advancement of Science describes a natural prairie on Long Island. The natural prairie of about fifty square miles, known locally as "Hempstead Plains," was treeless when the country was first settled ; and a considerable part can still be seen in its natural condition, though it is situated in a country with about 300 inhabitants per square mile.

Secondary education in agriculture was discussed by Director A. C. True at the Association of American Agricultural Colleges and Experiment Stations (Portland, Oregon, August, 1909). It was recommended (1) that agricultural colleges give credit in their entrance requirements for agricultural subjects properly taught in the secondary schools ; (2) that agricultural colleges should have a definite legal relation to the public school system ; (3) that agriculture should be generally introduced into the high schools ; and (4) that there should be a limited number of special state agricultural high schools.

The *Outlook* (February 5) describes fully an interesting phase of the Farmers' Coöperative Demonstration Work of the Bureau of Plant Industry which focuses upon the farmer boy. Through the coöperation of the Bureau and of the state and county school authorities, boys are led to agree to plant and care for one acre of corn each. Advice, seeds, etc. are furnished by the Bureau ; the soil, usually by the boys' fathers ; and prizes, by local civic organizations, private individuals, etc. Four such prizes for 1909 sent four southern boys to Washington for a week, and Secretary Wilson presented them with certificates of merit. Last year there were 12,000 boys in the corn clubs under Dr. Knapp's care, and the Bureau estimated that these clubs will register over 35,000 boys next year.

In the recent report of Professor Willis L. Moore, chief of the Weather Bureau, the relation of forests and rainfall is discussed and the statement is made that one is entirely independent of the

other. It is said that his opinion is shared by Professor Cleveland Abbe, the first weather forecaster of the federal government and Professor W. J. Humphreys, of Johns Hopkins University, and practically all meteorologists who have taken the trouble to look into the matter. The claim is made that drouths and excessive rain, as well as prolonged departures from the normal temperatures of a region, are due to eccentricities in the distribution of atmospheric pressure; these eccentricities of air pressure are traced back to the interchange of atmosphere between the equatorial and polar regions, the routes and intensity of the great currents undergoing more or less modification from time to time. These arguments lead Professor Moore to say that the causes of climatic change are general, not local; and he vigorously attacks the widely-accepted statement that removal of forests can diminish the rainfall. The instances on record of lessened precipitation after a particular area has been cleared he regards as mere coincidences, which will be proven to show no forest connection if observation is continued for a sufficiently long period. No other meteorological phenomenon, it is said, is so variable as rainfall, and any one who studies the figures for too short an interval is likely to be deceived.

Botanists, however, will not accept readily this coincidence theory and a lively discussion will doubtless follow the publication of this report.

NEWS ITEMS

Dr. Carlton C. Curtis has been advanced from assistant professor to associate professor of botany and Dr. Tracy E. Hazen from instructor to assistant professor of botany in Columbia University.

Professor Charles Fay Wheeler, expert in charge of the economic gardens, Bureau of Plant Industry, United States Department of Agriculture, since 1902, died March 5. Professor Wheeler was formerly instructor in the Michigan Agricultural College, and consulting botanist for the Michigan Experiment Station.